Local complications of global economic integration: privatisation receipts and volatile export earnings

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Introduction

This paper discusses two complications for domestic monetary policy stemming from greater international integration of the emerging market economies: privatisation-related capital inflows and large swings in export earnings. The macroeconomic consequences of foreign exchange inflows from these two sources are in many ways similar to those of other capital inflows: inflationary pressures, real exchange rate appreciation and possibly widening current account deficits. Yet experience has shown that the privatisation-related inflows and large swings in export earnings are different due to their relative size and their political economy implications. Because of these features, standard monetary tools to deal with capital inflows may have to be supplemented by unconventional policy tools such as special privatisation accounts and export earnings stabilisation funds.[2]

The paper is divided into three sections. Section 1 discusses why foreign exchange inflows from privatisation receipts and large swings in export earnings differ from other capital inflows, and why conventional monetary policy tools may not be fully effective in dealing with such inflows. Sections 2 and 3 review experience with the use of, respectively, special privatisation accounts and export earnings stabilisation funds.

1. Background

Characteristics of privatisation receipts and volatile export earnings

The first feature that distinguishes foreign exchange inflows related to privatisation and volatile export earnings is their size and variability. In the early and mid-1990s, privatisation proceeds for a group of 20 large emerging market economies were on average 1¾% of GDP a year during the active privatisation period (which on average lasted five years), and the standard deviation of the ratio of privatisation proceeds to GDP was on average half a percentage point.[3] This is considerably higher than in the case of privatisation in industrial economies such as the United Kingdom and France. Moreover, about 40% of privatisation receipts in the emerging economies between 1990 and 1998 were paid in foreign exchange. This proportion has increased significantly in the period since 1998, as many commercial banks and non-bank financial institutions in emerging markets have been acquired by strategic foreign investors.

Swings in commodity prices lead to massive year-to-year changes in export earnings. Oil exports, for instance, accounted on average for two thirds of total exports and 23% of GDP in OPEC members during 1996-2002 (see OPEC (2003)), while the standard deviation of the ratio of oil exports to GDP was 4½ percentage points. This is extremely large relative to total GDP volatilities in industrial countries (about 2%) or even developing countries (3-4%): see Hausmann and Rigobon (2003).

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[2] Other uses of stabilisation funds, such as managing earnings from non-renewable resources in order to create a store of wealth for future generations, are not discussed in this paper.

[3] Calculated from the data presented in Davis et al (2000).

The second distinguishing feature of privatisation-related inflows and volatile export earnings is the political economy of such inflows. The experience from central and eastern Europe and Latin America during the 1990s has shown that not only does privatisation have a direct impact on the public finances and money supply, but it also has a major impact on the development of the financial sector and more broadly on political and institutional stability. It may even affect the path of economic development: see Roland (2000). For instance, new owners of privatised enterprises often finance additional investment with foreign capital. Successful privatisation programmes may thus signal favourable changes in the policy regime and in growth prospects, which may in turn trigger capital inflows not directly related to the privatised enterprises. In Argentina, for example, the rapid and large-scale privatisation programme of the early 1990s and the use of part of the receipts to reduce public debt conveyed a signal to markets about a change in the policy regime that subsequently contributed to large capital inflows.

Similarly, how a country manages revenues from exports of its key resources has major implications for its macroeconomic stability and economic development. If policymakers ensure that export proceeds are spent so as to enhance the growth potential of the economy, the country will be better placed to deal with uncertain revenues and avoid boom-bust cycles. If the export proceeds are spent unwisely, the economy may succumb to the so-called "resource curse": see Eifert et al (2003).

One should emphasise that large swings in export earnings are characteristic not only of commodity-exporting countries. Several emerging economies have exports concentrated on a few manufactured goods such as electronics, or on tradable services such as computer software and tourism. Such countries increasingly face large swings in export earnings due to unpredictable changes in world demand. Moreover, swings of this kind are more or less a permanent feature of their economies, given the high fixed costs associated with specialisation. At the same time, many emerging market economies (eg India and China) have yet to face the challenge of large-scale privatisation, while in others the ongoing programmes have not run their full course. Even in new member states of the European Union, for instance, the privatisation of sectors such as transportation and energy has only just begun. Thus, in the period ahead privatisation-related inflows and large swings in export earnings are likely to pose persistent challenges to monetary policy in the emerging market economies.

Monetary and exchange rate implications

The monetary consequences of privatisation-related inflows are similar to those of other capital inflows. In particular, privatisations to non-residents tend to have an expansionary effect on monetary aggregates because of the associated inflows of foreign exchange. Privatisations to residents have a more ambiguous effect because they usually represent an exchange of a resident's domestic financial assets for the state's real assets. Any expansionary effect in such circumstances would depend on how the government spends the proceeds, how the residents finance the purchase of state assets, and whether the new owners make additional investments in firms they acquire, and how these investments are financed.

The expansionary effect of privatisation-related inflows is largely the consequence of the so-called *stock-flow constraint* in emerging economies: see Sinn and Sinn (1993). Given the absence of significant pre-existing wealth (in particular in transition economies) at the beginning of large-scale privatisation programmes, the stock of state assets could be sold either against the flow of annual savings of the population (plus any stock of existing savings, often held in foreign currency outside the banking system) or to foreign investors.[4] In either case, the sale of state assets is accompanied by foreign exchange inflows to the domestic financial system.

The monetary consequences of volatile export earnings are equally pronounced. For instance, if foreign exchange earnings from oil exports are converted into domestic currency and spent on non-tradables, which is often the case in emerging economies, this can lead to exchange rate appreciation and weaken a country's export competitiveness. Policymakers then face a dilemma: they

[4] The stock-flow constraint could in principle be relaxed through the import of capital by residents. However, informational constraints severely limit the access of emerging economy residents to international capital markets for such purposes. In any case, from the monetary policy perspective the consequences of asset purchases financed by foreign borrowing would be similar to direct asset sales to foreigners.

can let the nominal exchange rate appreciate and risk a loss of competitiveness for their non-oil sector, or the central banks can buy up the foreign exchange earned from oil exports and increase foreign reserves to avoid a nominal appreciation. The latter could create excess liquidity in domestic currency and may still result in real exchange rate appreciation.

How can monetary policy deal with these consequences of privatisation-related inflows and large swings in export earnings? In general, conventional sterilisation methods are likely to be less effective or have undesirable consequences if applied to very large and unpredictable shocks to liquidity.

In particular, markets in government or central bank securities in emerging economies are rarely so deep and so liquid as to allow the central bank to absorb via open market operations a sudden inflow of privatisation receipts equivalent to, say, 2-3% of GDP. Moreover, the costs of sterilisation in such cases may be substantial and lead to large operating losses for the central bank. If the central bank needs to raise interest rates in order to conduct such open market operations, this may give rise to short-term capital inflows seeking to exploit the differential between domestic and international interest rates. The adjustments in discount rates or (remunerated) bank reserves that are necessary to absorb a sudden increase in liquidity may be so large and so costly to the central bank as to make these tools impracticable. These disadvantages, together with the persistence of privatisation-related inflows (at least during active privatisation periods) and swings in export earnings make conventional sterilisation operations at best a short-term policy option.

Somewhat more promising options are to require banks to hold liquid assets abroad (see Ize (1996)) or to shift public sector deposits from commercial banks to the central bank. Where public sector deposits account for a large proportion of the banking system's deposits (eg in China, Malaysia, Russia and Thailand), the latter method has been highly effective in sterilising the inflows: see Lee (1996). However, frequent transfers of government deposits from and to commercial banks create uncertainty for the banks. Moreover, the central bank must ultimately be able to convince the government or other public sector entity to spend the funds deposited in a way that would not disrupt the foreign exchange and money markets. This raises the question whether other approaches that require cooperation between the central bank and fiscal authorities, such as special privatisation accounts or export earnings stabilisation funds, would be more effective in stabilising the impact of such flows. This question is further explored in the next section.

The second major monetary policy implication of privatisation receipts and volatile export earnings stems from the political economy characteristics of such flows. For a country where shocks to the foreign exchange market and money supply represent several per cent of GDP a year and where inappropriate use of government funds may disrupt macroeconomic stability, there is a clear need for coordination of monetary and other macroeconomic policies. Even though the main role in managing privatisation revenues and resource wealth belongs to fiscal policy, central banks need to take account of the profound implications of the management of these resources for monetary and exchange rate policy. As noted above, even when a large part of the inflows accrue to the government and government deposits are held with the central bank, the central bank still needs to agree with the government on measures that will smooth the withdrawal of deposited funds. Central banks may thus have to play a proactive role in devising solutions for smoothing the volatile flow of foreign exchange revenues and convincing other policymakers of the merit of such solutions.

2. Dealing with privatisation-related inflows

This section first reviews conventional monetary policy responses to foreign exchange inflows stemming from privatisation, and then looks at an alternative that has been successfully used in some transition economies: special privatisation accounts.

Conventional approaches

The precise effects of privatisation receipts depend on the uses of such receipts. One approach would be to use the privatisation proceeds to pay off public sector external debt. This policy automatically redirects the inflows abroad and so limits the impact on the local economy. External debt reduction also lowers the debt-related risk premium. A potential disadvantage from the perspective of monetary management is that, like a successful privatisation programme, debt repayment may signal an

improvement in the investment climate and trigger other capital inflows, thus increasing rather than eliminating the need for sterilisation. If additional inflows are foreign-financed investment programmes in privatised enterprises, such inflows may contain a large import component, particularly if new technologies are being introduced. To that extent, the inflows would be automatically "sterilised" through deterioration in the current account.

The repayment of debt owed by the government to the central bank would have the same advantages for monetary policy as the repayment of external debt (ie limited impact on the local economy). But the repayment of debt to other domestic creditors (or settlement of arrears) might require the central bank to sterilise any resulting increase in domestic liquidity.

Where privatisation proceeds are placed in public sector accounts and how they are used has important implications for monetary policy. For instance, it is generally recommended that the privatisation proceeds be fully reported in the official budget and not hidden in some extra-budgetary account. Nevertheless, as discussed below, the use of special privatisation accounts, in particular if held with the central bank, does offer some advantages - from both monetary management and political economy perspectives - over the placement of privatisation proceeds in the government budget.

Table 1

Use of privatisation proceeds

Debt retirement	Capital expenditure	Settling of liabilities of privatised firms	Social safety nets	Other structural reforms (eg pension reform)	General expenditure (proceeds not earmarked for specific use)	Other
Hungary	Korea (21%)	Czech Rep	Peru (20%)	Peru (1%)	Argentina	Korea (66%)
Korea (13%)	Peru (4%)	Thailand	Philippines		Colombia	Philippines
Israel	Thailand		Turkey (1%)		Hong Kong SAR (100%)	Thailand
Mexico	Turkey (14%)				Hungary	Turkey (66%)
Peru (73%)					Israel	
Poland					Mexico	
Saudi Arabia					Malaysia	
Thailand					Colombia	
Turkey (13%)					Peru (2%)	
					Philippines	
					Poland	
					Saudi Arabia	
					South Africa	
					Turkey (7%)	
Number of countries: 9	4	2	3	1	14	4

Source: Central bank responses to BIS questionnaire.

Another standard recommendation is not to treat privatisation proceeds as recurrent income because such receipts reflect an exchange of assets and as such are lumpy, transient and uncertain. Finally, earmarking privatisation receipts for specific uses, which could be potentially attractive from the political economy perspective, complicates fiscal management and makes it difficult to reallocate

spending in response to changes in circumstances and priorities. As such, the practice of earmarking privatisation receipts is generally discouraged.[5]

To what extent have emerging economies followed the conventional advice? As indicated in Table 1, several countries (including Hungary, Korea, Israel, Peru, Poland, Saudi Arabia, Thailand and Turkey) have actually used privatisation proceeds to pay off public sector debt. But most countries have used the privatisation receipts for general government expenditure or for capital spending and other unspecified uses. The use of earmarking to cushion the short-term social impact of privatisation or to facilitate structural reforms has been limited. Only the Czech Republic and Thailand have apparently used privatisation proceeds to settle liabilities of divested firms.

Table 2 indicates further discrepancies between policy recommendations and practice with regard to privatisation proceeds. While many countries channel the proceeds of privatisation through the government budget, many have kept the proceeds outside the budget. The majority of countries have also treated privatisation proceeds as a revenue item in the budget, with only a few - Argentina, Hungary, Israel, Peru, Poland and South Africa - following the advice to treat such proceeds as a financing item.

Table 2

Placement and recording of privatisation proceeds

Placement of proceeds						**Recording of proceeds placed in the budget**		
Budget		**Privatis-ation agency**	**Special account**		**Other**	**Revenue**	**Financing**	**Other**
Central government	**Sub-national govern-ments**		**At central bank**	**At other agency**				
Argentina	Argentina	Hungary	Czech Rep	Peru	Hong Kong[1]	Argentina	Argentina	Argentina
Chile		Korea	Peru	Philippines	Peru	Chile	Hungary	
Hong Kong SAR		Peru	Philippines[2]	Thailand[3]		Hong Kong SAR	Israel	
Israel		Turkey	Poland			Korea	Peru	
Korea						Mexico	Poland	
Mexico						Malaysia	S Africa	
Malaysia						Philippines		
Peru						Saudi Arabia		
Philippines						Thailand		
Poland								
Saudi Arabia								
South Africa								
Thailand								
Number of countries: 13	1	4	4	3	2	9	6	1

[1] The proceeds are placed in a government account with a bank not owned by the government. [2] Foreign currency deposit account of the National Treasury with the central bank, used for privatisation receipts in foreign currency. [3] Used for repayment of part of government debt.

Source: Central bank responses to BIS questionnaire.

[5] Targeted use of the proceeds to help cushion the short-term social impact of privatisation may be appropriate, however. Privatisation proceeds might also serve a useful role in providing a temporary cushion for countries pursuing comprehensive structural reforms, in particular if the country faces high borrowing costs.

Special privatisation accounts

As indicated in Table 2, many emerging market economies have channelled at least part of the receipts from the sale of state assets through special privatisation accounts set up at the central bank or other government agencies. Perhaps the most articulated use of this approach can be found in the Czech Republic, although similar approaches have also been explored in Poland, Hungary and Peru.

As discussed by Böhm and Źdárský in the accompanying paper in this volume, the Czech koruna sharply appreciated following the sale of a large commercial bank to a strategic foreign investor in late 1999, and an official announcement that a large proportion of state-owned real estate would be privatised beginning in the second half of 2000. Fears that the exchange rate might overshoot and subsequently fall back led the Czech National Bank to agree with the government on a joint strategy for dealing with future large privatisations and other capital inflows: see Czech National Bank (1999). One element of this strategy was a commitment by the government not to issue foreign currency denominated bonds for one year.

The main element, however, was the establishment of a special privatisation account in which the foreign exchange proceeds from the large sales of state property were to be deposited. Any conversion of the funds withdrawn from this account into domestic currency was done outside the foreign exchange market: the Czech National Bank would purchase the foreign exchange from the government at the prevailing market exchange rate and transfer the foreign exchange to its international reserves. Because the transaction was not intermediated in the domestic foreign exchange and money markets, it did not affect the exchange rate or the interest rate. The government spent most of the proceeds on housing and infrastructure development, which helped smooth the impact on aggregate demand.

The growing deficits in the public finances in 2000 and 2001, however, made it difficult for the government to stick to its agreement with the Czech National Bank. In 2000 and 2001, only about 50% of the privatisation proceeds were converted into domestic currency via the privatisation account. Further sharp appreciation of the koruna in late 2001 and early 2002 prompted the Czech National Bank to press harder for the government's compliance with the agreement on the privatisation account. This resulted in a reinforced agreement that established an inventory of the government's existing and potential foreign exchange commitments; provided for the payment of part of the future privatisation proceeds in domestic currency; and set terms for compensation by the government of the losses the Czech National Bank incurred in sterilising the privatisation proceeds - see Czech National Bank (2002). This agreement was fully respected and the sharp appreciation of the koruna was thereby halted - see Czech National Bank (2003).

Poland used a similar approach. The Ministry of Finance opened a special foreign exchange account for privatisation proceeds at the National Bank of Poland. However, this account was used not only to deposit the privatisation receipts in foreign currency, but also for the funds obtained from the issuance of Polish government eurobonds, from the sale of collateral from Brady bonds and from other similar operations. As in the Czech case, one reason for setting up this account was to avoid injecting large volumes of privatisation proceeds into the still shallow foreign exchange market. Another reason was to use the funds in the account to service the external debt of the public sector. Direct transactions via the special account were considered less disruptive for the foreign exchange market than government purchases of the foreign currency from the central bank. As in the Czech case, the use of the privatisation account reduced exchange rate volatility, but considerably increased fluctuations in the central bank's foreign reserves.

Privatisation proceeds in *Hungary* are booked as revenues of the Hungarian Privatisation and State Holding Company. If such revenues exceed the planned amount, the surplus is used to reduce the central government's liabilities to the central bank, which then uses these funds to pay back its own foreign debt. In the event, the greater part of revenues from privatisation have been used to reduce the foreign debt.

In *Peru*, the authorities established special rules to improve the administration of the privatisation proceeds and enhance transparency. About 25% of the proceeds from sales of state-owned property (one half in 2001) were deposited in the Fiscal Stabilisation Fund at the central bank, while another 50% were deposited in a special treasury account. The funds in the treasury account were in turn used mainly for public debt retirement.

Some other Latin American countries were less successful in managing privatisation proceeds. In *Mexico*, the bulk of privatisation receipts in the early 1990s were deposited in a special account at the

central bank and used for repayment of government debt. However, the parliament became aware of this practice, and demanded that privatisation proceeds be channelled through the state budget. Once this was done, the funds became subject to political bargaining and were used for public projects. In *Argentina*, although privatisation proceeds were occasionally used for debt repayment, it was very difficult for the central bank to obtain approval for a more permanent arrangement to "freeze" privatisation revenue.

The conclusion is that experience with the use of special privatisation accounts seems to have been positive, but success requires perseverance by the central bank in devising and implementing the rules of engagement, and, not least, the understanding and cooperation of the fiscal authorities and the main political constituencies.

3. Large swings in export earnings

Large and volatile revenue streams from exports of oil, non-oil commodities and other specialised goods and services can create a number of complications for domestic monetary policy. During upturns, such exports generate shocks that can affect the exchange rate through disposable income and wealth effects, through procyclical government spending on non-tradables, or through capital inflows.[6] During downturns, countries with heavy reliance on volatile export revenues may have substantial financing needs. International lending to such countries, however, tends to be procyclical. Countries may therefore place a premium on liquidity and may wish to hold a large stock of liquid financial assets to avoid passing on the shock to the domestic private sector. But this has the disadvantage of complicating domestic monetary policy.

These considerations, as well as the difficulty of sterilising "excess" foreign exchange inflows with conventional monetary tools, have led to alternative approaches to managing large swings in export earnings, such as export revenue stabilisation funds.

- *Contingent stabilisation funds* are designed to accumulate resources when the export commodity price or revenue exceeds some threshold, and to pay out when the price or revenue falls below a second threshold. The thresholds are usually preannounced. By transferring uncertainty and volatility to the fund, recurrent resources available to the budget are made more predictable and stable.
- In a *financing fund* the operational rules are designed so that the fund effectively finances the overall budget balance. The fund accumulates assets to the extent that there are actual surpluses in government finances. A separate institutional structure for the management of the fund is not required because all revenues and expenditures can be managed in a special government account. Russia, for instance, has operated such a "virtual fund" in recent years (see below).

Although export revenue stabilisation funds offer many advantages, their design raises complex operational issues. Only a few are mentioned here.[7]

- Stabilisation funds provide no guarantee against the volatility of expenditure, as governments could still borrow in good times in order to finance additional spending. Expenditure smoothing requires additional fiscal policy decisions besides the operation of the fund.
- Adequate price or revenue rules, which signal the need to accumulate or withdraw assets from the fund, may be difficult to establish.

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[6] There is evidence that a volatile real effective exchange rate can reduce capital formation as well as non-traditional exports: see World Bank (1993).

[7] For additional issues see Davis et al (2003).

- While financing funds provide an explicit link between budget outcomes and accumulation of assets in the fund, they do not attempt to deal directly with the problems posed to the budget by the volatility of resource revenues.
- An effective stabilisation fund would also need to have a clear asset management strategy that is coordinated with other government financing operations.
- A case may exist for placing the assets of a stabilisation fund abroad, since investment in domestic non-governmental financial assets could transmit resource volatility to the economy.

Country experiences with the use of export revenue stabilisation funds have been mixed.[8] *Chile's* copper stabilisation fund was established in 1985 following a sustained increase in the international copper price. The fund's accumulation and withdrawal rules are based on a reference copper price determined annually by the authorities. No explicit formula is used to calculate the reference price. Information on the fund's assets is not publicly available, but it is understood that the resources of the fund grew substantially after 1987, and that significant withdrawals took place beginning in 1998 due to a sharp downturn in copper prices. By 2002, the resources of the fund had been exhausted and the fund had to be replenished: see Davis et al (2003). As Chile's macroeconomic and fiscal policies have been generally sound, the main advantage of the copper stabilisation fund has been to help the government resist expenditure pressures during upswings in copper prices in the late 1980s and the mid-1990s.

Venezuela established a macroeconomic stabilisation fund in 1998 with the objective of insulating the budget and the economy from fluctuations in oil prices. Initially, the rules for transfers to and from the fund were relatively strict. Resources could be drawn from the fund only if oil revenues in a given year were below a reference value or for foreign debt repayment (if resources in the fund exceeded 80% of the five-year moving average of oil export revenues). The assets of the fund had accumulated to 7% of GDP by 2001. In subsequent years, however, the rules were substantially relaxed, so that by 2003 the assets had fallen below 1% of GDP. Recently, the government even had to borrow at high cost to meet the (loosened) fund regulations. The rule that the state oil company PDVSA (which accounts for 77% of Venezuela's exports) must sell foreign exchange proceeds to the central bank has proved much more effective in stabilising the exchange rate, although it has complicated monetary policy under the current regime of exchange controls. The central bank has also used (with apparent success) an interest rate operating target to smooth large fluctuations in domestic liquidity resulting from volatile oil export revenues.

Mexico established a small oil stabilisation fund in 2000. The fund's rules envisage that a proportion of total federal government revenue (which includes oil revenues) in excess of budgeted amounts is to be deposited in the fund. The accumulated resources can be used to compensate the budget for revenue shortfalls. As in the case of Venezuela, however, the use of a mandatory foreign exchange surrender requirement has in practice proved more effective than the stabilisation fund itself. In particular, the state-owned oil company Pemex, which has domestic monopoly in the extraction, production and sale of crude oil and most of its derivatives, has to conduct all foreign exchange transactions through the central bank (which, in turn, uses part of the proceeds for repayment of Mexico's foreign debt) rather than the foreign exchange market. Pemex, however, has the discretion to determine the amount and timing of such operations, but has to give the central bank advance notice of transactions that might have a major impact on domestic liquidity. In an effort to limit the carrying costs of foreign reserve holdings, the central bank has resorted to the sale of dollars at a predetermined rate when the growth of foreign reserves exceeds a certain threshold.[9]

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[8] See Fasano (2000) and Davis et al (2003) for more detailed reviews, focusing in particular on fiscal issues.

[9] On a quarterly basis, the Bank of Mexico publishes in advance the amount of dollars to be offered in the exchange market during the next quarter. The amount of dollars to be auctioned equals 50% of the international reserve flows accumulated in the previous quarter (after considering the total number of offerings made via this mechanism during the same period). Depending on the amount of dollars to be offered, auctions a fixed amount of US dollars every day on a predetermined schedule. Daily offerings are determined based on the number of working days in the quarter in which auctions will be held. For example, if $1.5 billion will be sold during a quarter with 60 working days, the daily amount to be auctioned will be $25 million.

Since monetary policy in Mexico is conducted within an inflation targeting framework, the central bank has to sterilise foreign exchange inflows related to oil revenues. Given the lack of government paper, the central bank started over time to issue its own instruments. However, this was not sufficient to absorb the liquidity and may have led to some crowding-out in the local bond market. The central bank was thus compelled to use, in addition, mandatory deposit requirements for commercial banks. However, this led to losses as deposits were remunerated from the central bank's own resources.

Colombia has also used an oil stabilisation fund to smooth the flow of proceeds from oil exports. All the proceeds of this fund are kept abroad, thus insulating domestic foreign exchange and money markets from fluctuations in oil revenues. The experience with oil revenue has not always been positive, however. When a major oil field was discovered in 1991, much of the resulting revenue was spent, raising government expenditure to 35% of GDP from 21% within a few years. On the other hand, the country had a positive experience with a coffee stabilisation fund, which has operated since 1944, bringing considerable stability to the economy during the fixed exchange rate regime.

An oil stabilisation fund in *Algeria* was established in 2000. The fund receives deposits when oil revenues exceed budgeted amounts, calculated around the reference value of $19 per barrel (a 15-year average price of Algeria's oil exports). Withdrawals are made to repay public sector debt, finance public investment, or - in the case of hydrocarbon revenue shortfalls - to finance other expenditures. Public expenditure itself is planned so as to be in balance with revenues when the price of oil is at $19 per barrel. At end-2001, the resources in the fund amounted to about 6% of GDP. Transmission of shocks to domestic liquidity is reduced through a 100% foreign exchange surrender requirement, capital controls and, when necessary, changes in minimum bank reserve requirements. In contrast to many oil-exporting countries, Algeria had success in managing its oil revenue even before the oil stabilisation fund was established. Since 1989 fiscal policy has been managed in a medium-term framework. Much of the revenue has been used to diversify the hydrocarbon sector and, except for the crisis in 1994-98, fiscal discipline has been maintained.

High oil and gas revenues have translated into a particularly acute monetary dilemma in *Russia*. Oil exporters (mostly privately owned companies) and the state-owned gas giant Gazprom, which currently supplies one quarter of all gas on the world market, have earned substantial foreign exchange receipts since 2000: see OECD (2002). A large part of the receipts had to be converted to roubles under a mandatory foreign exchange surrender requirement. The central bank has resisted nominal exchange rate appreciation and has been buying most of these proceeds. This policy has led to an increase in the central bank's foreign reserves to $65 billion as of October 2003 from about $12 billion in 1999. The cost of sterilisation was borne by the government budget and hence was not a constraint on these operations. However, high oil prices in the past two years have confronted the central bank with a dilemma as to how to sterilise the large foreign exchange inflows. Sterilising the inflows with short-term government instruments would probably have required offering higher interest rates on these instruments, which could have triggered additional short-term capital inflows (in particular from hedge funds) that could not ultimately be sterilised.

To address this dilemma, the Ministry of Finance has kept most of its deposits (equivalent to about 40% of broad money supply) in an account with the central bank. By accumulating government deposits and using them for repayment of external debt, the central bank and the government were offsetting what would otherwise have been massive purchases in the foreign exchange market by the central bank. Effectively, they were mimicking the operations of an oil stabilisation fund. Compared with a stabilisation fund, however, the government retained full discretion over the level of savings and was, therefore, faced in each annual budget with the sensitive problem of projecting oil prices for the coming year: see Owen and Robinson (2003). Fortunately, in both 2000 and 2001, oil prices exceeded projections and, with growth and inflation also higher than expected, budgetary surpluses turned out to be much larger than originally targeted. These surpluses relieved the central bank from having to pursue a more active monetary policy.

This approach, however, has led to complaints that the government was "hiding" the oil revenue. Moreover, government balances at the central bank were highly cyclical. In response, the government established an explicit oil stabilisation fund. The fund, which began operations in 2004, accumulates resources when the price of Urals Crude exceeds $20 per barrel, while withdrawals are permitted when the price falls below this threshold. The total amount in the fund is capped. The fund's resources will be used for external debt repayment and - in case the price of oil stays below $20 per barrel for more than a year - stabilisation of the government budget. The operation of the fund should help the central bank sharpen its focus on exchange rate policy, as supply and demand will play a greater role in the determination of the exchange rate in a more certain foreign exchange market environment.

In summary, evaluation of country experiences suggests that export earnings stabilisation funds have been associated with a variety of operating rules and monetary and fiscal policy experience. In several cases, rules have been bypassed or changed, and additional rules, such as compulsory foreign exchange surrender requirements, have had to be used to constrain the impact of volatile export revenues on the exchange rate and money markets. Regarding the political economy arguments for such funds, the key problem seems to have been the absence of transparent rules free from political interference, as well as of regular and frequent disclosure of the operations of the funds. The main lesson thus seems to be that export earnings stabilisation funds should not be seen as a simple solution to a complex problem.

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